

SEQUENCE LISTING



<110> Vasta, Gerardo R.

Marsh, Adam G.

Fernandez-Robeldo, Jose A.

Coss, Cathleen A.

Wright, Anita C.

<120> Assay for Perkinsus in Shellfish

<130> 4115-137 CIP

<140> US 09/771,935

<141> 2001-01-30

<150> US 08/900,117

<151> 1997-07-25

<150> US 60/023,345

<151> 1996-07-26

<160> 19

<170> PatentIn version 3.1

<210> 1

<211> 1150

<212> DNA

<213> *Perkinsus marinus*

<400> 1
aaagtgcac cttccccat aaacccctc cccacccct tggacattgt tccactttc 60
acttgtattg tgaagcaccc aatgctagcc catagaacag tccagtagtt caatagagag 120
actagtgaac atagttata acattgtcca aggggtggag ggggatgcgc gaaatcgatg 180
tgcacgttg gtcaaagatg ctcgcgaaag ctgcacatca atttcgcaca tggcgaaat 240
tgacttgcag gtgggtataa aagttgatgt aggccatgtg gctcgatttc aaccatatgg 300
gtatgcttct gaggatgggg tgttacagtg gaccatatga gtaggtcat ttggagatgt 360
caccaaaatg gtctaaatct gcgcattcca tttaagtgaa tttaagtgaa atttaagtga 420
attttactta aaattgaccc ttgcgttgc gcagatttg ggtggtgatg ggtgacgcgg 480
cgaattttt aaaaaagagg tatatcgcgt gctatttgta ttgtggtat caccgcgtca 540
ccaatcacca ttgacggttt ctgttcgaa gttttccgg attattgcat ttgttatata 600
attgtgggtg gctgattctt gcgaaaggac tgggtgtatg tccgagttcc caaattggga 660
gttttggac atcactcctg atctgcggc ggcgatcagg atgactgaca ttgcata 720
ttttgggtat tcgatagctg ccaaatcggt cagcgtcgag tattccgggtt tattcgaagg 780
attcatgata ttgcaaaata tcattgattt tcattgggtt ttgtatttagt acccgctcat 840
tgtggaaag tcgggtggat ttatcttacc cgcaaatcta atacaagatt tgcatgatgc 900
agcaatagac caaggttagt atagcagttg tatttatacg actagttatg caaaccctt 960
gtgtttttg ttgcgactct tggcgtgaac cgaaagaccg gacctcgctt tcgactattc 1020
atcttgcgtatg gatatgagat cgcaagggtt tcgcttcgtt cgatatttag tgaccatcag 1080
agcacgcgtac gactttgtat tatttcgtt gatttaatcg gaagctcgca agcattgcat 1140
tgatgcaatc 1150

<210> 2

<211> 1550

<212> DNA

<213> Perkinsus sp.

<220>

<221> gene

<222> (1)..(1550)

<223> The nucleotide sequence of the NTS of rRNA of *P. andrewsi*, isolated from *Macoma balthica*.

<400> 2	
ttttcatttt tgcttcaca accccgcacc ccatgtacaa tggccaaac cactagagtt	60
tcaacaacat tcggatttga caacatgtca acaattcaca acagaaattt acaacattgt	120
cacaattctt caaattggac aacattggac aaaaattcac aacatacatt ggacaacagt	180
ggacaacgaa cccaaacccg acaacattgtt ccagggggat agggggtgaa aaagcagtgc	240
cggcaaagtc gaaagatgtc aagttggaaat gcggtcaaa ttgcattt gtgtaaatcc	300
gcaattttgc caatgtgcaa ttttgcattt gtgcattt gcaaatgtgc aattttgcca	360
atgtgcattt ttgcaaatgc gcaattttgc aaatccgcaa ttttgcattt gtgcattt	420
gaaaaatcac caaatgaaaa tcgtccaagt cgaattggag gctgtggac atggcccg	480
gatccccctgg ttacagtggaa caatatcccc gcaatattcg ctgtattt gatgttcgt	540
gttttggcaa attttgagtc tgaaaaaaaaa aattgcattt ggcggaaagg ggtgaaggaa	600
aaaaaaagcac ccccgaaagg aaaaattccct ttaagtcct tgccattt caaaatttc	660
aaaaattgtt gcaatgcgc tttgttatt tggccgttc attgtgtca aaagttgcct	720
gggggtggta cacaatgcac ggaattgggtt ggaagggttg tgattgaaaa ttggcgtgt	780
cacacaattt tgccattt caaaattcg caaatggac aaaaagggtt cgccacagt	840
caaattgcgc aaatttcaact ttgaagtggag tgccattt tggggcagaa atgtgggtac	900
agcatcgaaa ttataataa atattctata tttagtatct ttattataat ttgtgtcac	960
caatcaccat tttagaattt ttatttttt atgttttagt gaccgcggga tttttgcaa	1020
agtactattt tgatgtttga gttgtttgaa atggcaatt tagaacatca tcagaaatcg	1080
ctgaatagt atttttgagt ttgactgtttt gaagtgtttt ggttattcg cagctccaa	1140
atcggtcagc gtcgaatata atagcatttt tgggtgtata tgatatttag cgatatttt	1200
ggaatcatgg gttttgtat tagtacccgc tcattgtggg aatgtcgggt ggttcaat	1260
cacctgcaaa tttaatacag gatttgcattt atgcagcgac tgaccgggtt tggtaataa	1320
gctgatttattt cggcttattt tgcaagaccta tcgttttagt agttgcgact cttggcgtga	1380

accggaagac cggaacctga attcgactat ttacgtccgt aaacaggaga tttcaagaat 1440
attgcacatt ttgcgtgata taaacgtgat catctgagca cgcttcgact cttggatatc 1500
tgctaatcag ccgtcatctg agagctcgca agcattgcaa ttgatgcaat 1550

<210> 3

<211> 1413

<212> DNA

<213> Perkinsus sp.

<220>

<221> gene

<222> (1)..(1413)

<223> The nucleotide sequence of the NTS of rRNA of *Perkinsus mackini*,
isolated from *Mercenaria mercenaria*.

<400> 3
cgtgcccttt tcacgaattc acagccccgc accccatgta caatgttgcc cacccgaaat 60
gcctgcctgc ccacccgaaa tgcccgaaat gcccgttaga aaaagtatgc gaaaagttct 120
tgtcaatttt gacagtgtgt gaaaaaaactg aaaaagtcca ctcaacattg cattatgcaa 180
tttgcctactc aacattgtcc agggggatag ggggtgaaaa agtatcgac tccaactgaa 240
aagatgctaa gttgaaatgc ggcgcaaatt catcaattgta gttgcgaaaa tccctaaagt 300
cgaatttggc actcggtgac atgatcgaaa atttccctgg ttacagtggt caaatcccag 360
caattttggc aaagttttt gtttgcac ttttcgcaaa tttcggtct gaaaaaaaaa 420
tttcaacttt ggcgcaaagggt gtcaaaggaa aaaaaaggcac cctcaaaagg aaattccct 480
ttaatcccct ttgaaaaaaaaa tgcgcaaagt taaatttgcg aaaatttgcg ttttctata 540
tgaccgattt gttggtgcca gatggtagtc gggatggta cacggtgac ggaactcggt 600
ggaagttctg gagttacgaa ttgggtccgt caccacaatt tgcgcatattt tgaaatttgcg 660
caaatttgcg aaaaaaggcac cgccgaaagt taaatttgcg gaaaatttgcg tttcaggtcg 720
gtgcgcaaat ttggggtgaa aaagtggta cagcatcaga attataataa ataatctata 780
atcttagttt tttattataa ttagctgtca ccaatcacca tttgagattt tttatTTTT 840

tatgttttag tgaccgcggt atttttcca gagtactatac gtgatgtctg agttgtctaa 900
aacggcaatt tcagaacatt accagaaaac actgaatagt ggtttctgag tctgactgtt 960
tgaagtgttt tgggtattcg gcagctgcca attcggtcag gggttaatatactaacattt 1020
ctgtgtgtat atggtattta gcgatatacat tggaaatcatg gggtttgtt ttagtacccg 1080
ctcattgtgg gaaagtcggg tggttcaata tcacctgcaa atttaataca ggatttgcatt 1140
gatgcagcga ctgaccgggg ttagtataat agctgattat tcggcttatt atgcagacct 1200
atcgtgttag tagttgcac tcttggcgtg aaccggaaga ccggaaacttg atttcgacta 1260
tttacgtccg taacacgtcc gtaaacagga gatttcaaga atattgcaca ttttgggtgtga 1320
tataatcgtg atcatctgag cacgcttcga ctcttgaata tttgttaaac aaccgatatt 1380
cgggagctcg caagcattgc aattgatgca atc 1413

<210> 4
<211> 21
<212> DNA
<213> Perkinsus marinus

<220>
<221> misc_feature
<222> (1)..(21)
<223> Forward primer (5'-3').

<400> 4
cacttgtatt gtgaaggcacc c 21

<210> 5
<211> 21
<212> DNA
<213> Perkinsus marinus

<220>
<221> misc_feature
<222> (1)..(21)
<223> Reverse primer (5'-3').

<400> 5
ttggtgacat ctccaaatga c

21

<210> 6
<211> 20
<212> DNA
<213> Perkinsus marinus

<220>
<221> misc_feature
<222> (1)..(20)
<223> Forward primer (5'-3').

<400> 6
atgcttagccc atagaacagt

20

<210> 7
<211> 20
<212> DNA
<213> Perkinsus marinus

<220>
<221> misc_feature
<222> (1)..(20)
<223> Reverse primer (5'-3').

<400> 7
atgctagccc acatcacagc 20

<210> 8
<211> 22
<212> DNA
<213> *Perkinsus atlanticus*

<220>
<221> misc_feature
<222> (1)..(22)
<223> Forward primer (5'-3')

<400> 8
atgctatgg tggttgcgga cc 22

<210> 9
<211> 20
<212> DNA
<213> *Perkinsus atlanticus*

<220>
<221> misc_feature
<222> (1)..(20)
<223> Reverse primer (5'-3')

<400> 9
gttagcaagcc gtagaacagc 20

<210> 10

<211> 24

<212> DNA

<213> Perkinsus sp.

<220>

<221> misc_feature

<222> (1)..(24)

<223> NTS7 forward primer (5'-3') for Perkinsus andrewsi

<400> 10

aagtcgaatt ggaggcgtgg tgac

24

<210> 11

<211> 20

<212> DNA

<213> Perkinsus sp.

<220>

<221> misc_feature

<222> (1)..(20)

<223> NTS6 reverse primer for Perkinsus andrewsi

<400> 11

atttgtgtaac caccccaggc

20

<210> 12

<211> 19

<212> DNA

<213> Perkinsus sp.

<220>

<221> misc_feature

<222> (1)..(19)

<223> Generic forward primer (5'-3') PER1 for *P. marinus*, *P. atlanticus* and *P. andrewsi*.

<400> 12

tagtaccgc tcattgtgg

19

<210> 13

<211> 17

<212> DNA

<213> *Perkinsus* sp.

<220>

<221> misc_feature

<222> (1)..(17)

<223> Generic reverse PER2 primer (5'-3') for *P. marinus*, *P. atlanticus* and *P. andrewsi*

<400> 13

tgcataatgctt gcgagct

17

<210> 14

<211> 22

<212> DNA

<213> *Perkinsus* sp.

<220>

<221> misc_feature

<222> (1)..(22)

<223> Forward SSU3F primer (5'-3') for *P. andrewsi*

<400> 14
agtggattt ctgccttggg cg

22

<210> 15

<211> 22

<212> DNA

<213> Perkinsus sp.

<220>

<221> misc_feature

<222> (1)..(22)

<223> Forward SSU4F primer (5'-3') for P. andrewsi

<400> 15
accaggtcca gacataggaa gg

22

<210> 16

<211> 712

<212> DNA

<213> Perkinsus sp.

<220>

<221> misc_feature

<222> (1)..(712)

<223> A nucleotide sequence of the ITS1-5.8. S ITS2 regions of P. andrewsi

<400> 16

acaccgattc attctctgag aaaccagcgg tctctgtaaa aggagatggg atctccgctt

60

tgtttagatc cccacacactg accgctttaa cggccgggt aggtgcataa cttctatgaa

120

ccaattgtac tagtctaaag tatccaatat cctttggat tttggtatTTT caaaaacgaaa 180
ttccaaactc tcaacgatgg atgcctcgcc tcgagaatcg atgaaggacg cagcgaagtg 240
cgataagcac tgcgatttgc agaattccgt gaaccagtag aatctcaac gcatactgca 300
caaaggggat ttatcctctt tgtacataca tatcagtgtc gctttcttc ccgatacaaa 360
cattttggattt atttacaatc aacattatgc tttgtatccc gcttggattc ctttattggg 420
atccgctgtg tgcgcttgct gacacaggcg cattaatttgc caaggctata atactactgt 480
actgttagccc cttcgcaaga aggactgcgc tagttagtat ctggatgc tcgcaactc 540
gactgtgttg tgggtgattc cgtgttcctc gatcacgcga ttcatcgctt caacgcatta 600
tgtcaaattt gatgaatgca gagagttgtt tatgaattac gcgatcgctt tggctcaga 660
atcgttacta tagcacgctt gtcgggttgc aacctggcaa tatgtcatca tt 712

<210> 17

<211> 1808

<212> DNA

<213> *Perkinsus* sp.

<220>

<221> misc_feature

<222> (1)..(1808)

<223> A nucleotide sequence of the SSU rRNA of *P. andrewsi*

<400> 17
acctgggtga tcctgccagt agtcatatgc ttgtctcaaa gattaagcca tgcattgtcta 60
agtataagct ttAAACGGCG aaactgcgaa tggctcatta aaacagttat agtttatttg 120
gtgatcgatt actatttggta taaccgttagt aattcttagag ctaatacatg cgtcaaggcc 180
cgacttcgga agggctgcgt ttatttagata cagaaccaac ctagctccgc ctagtccttg 240
ttgggtgattc ataataaccc ggcgaatcgc acggcttgc cggcgatggaa ccattcaagt 300
ttctgaccta tcagctatgg acggtagggt attggcctac cgtggcggttgc acgggttaacg 360
ggaaatttagg gttcgattcc ggagagggag cctgagaaac gactaccaca tctaaggaag 420
gcaacaggcg cgcaattac ccaatcctga tacagggagg tagtgacaag aaataacaat 480

acaggccaat tctgtcttgt aattggaatg agtagatttt aaatctctt acgagtatca 540
attggagggc aagtctggtg ccagcagccg cggttaattcc agtccaata gcgtatatta 600
aagttgttgc ggttaaaaag ctcgtagttg gatttctgcc ttgggcgacc ggtccacctt 660
tcctacgggt taggttggta ccaggttga ccttggctt ttcttggat tcgtgctcac 720
gcacttaact gtgcgctgac cgtgttccaa gactttact ttgagggaaat tagagtgtt 780
caagcaggct tatgccgtga atacattagc atgaaataat aggatatgac tttggtcata 840
ttttgttggc ttcttaggact gaagtaatga ttaataggaa cagtcggggg cattcgtatt 900
taactgtcag aggtgaaatt ctggatttg ttaaagacga actactgcga aagcattgc 960
caaggatgtt ttcattgatc aagaacgaaa gttagggat cgaagacgat cagataccgt 1020
cctagtctta accataaact atgcccacta gggattgggaa gtcgttaatt ttagacgctc 1080
tcagcacctc gtgagaaatc aaagtctttg ggttccgggg ggagtaggtt cgcaaggctg 1140
aaacttaaag gaattgacgg aagggcacca ccaggagtgg agcctgcggc ttaattttagt 1200
tcaacacggg aaaactcacc aggtccagac ataggaagga ttgacagatt gatagtctt 1260
tcttgattct atgggtggtg gtgcattggcc gttcttagtt ggtggagtga tttgtctgg 1320
taattccgtt aacgaacgag accttaacct gctaaatagt tgcgtgaaat cttgtatttc 1380
accgctactt ctttagagggc ctttgtgtgt ttaacacaag gaagcttgag gcaataacag 1440
gtctgtgatg cccttagatg ttctggctg cacgcgcgt acactgacac gatcaacgag 1500
tatttccttgc cccggtaggg tttagggtaat ctggtaat cgtgtcgtgc tagggataga 1560
cgattgcaat tattcgtctt caacgaggaa ttccttagtaa atgcaagtca tcagcttgc 1620
ttgattacgt ccctgcctt tgtacacacc gcccgtcgct cctaccgatt gagtgatccg 1680
gtgagctgtc cggactgcga ttagttcagt ttctgttctt ttgcgggaa gttctgcaaa 1740
ccttatcact tagaggaagg agaagtcgta acaaggtttc cgtaggtgaa cctgcagaag 1800
gatcattc 1808

<210> 18

<211> 1147

<212> DNA

<213> *Perkinsus atlanticus*

<220>

<221> misc_feature

<222> (1)..(1147)

<223> A nucleotide sequence of the NTS of rRNA of *P. atlanticus*

<400> 18		
tcttttaaa tcgcactcat ggcttgcgtca tgcgtgcaag ccccccggagc cccctggaca	60	
atgttatccc agctcaacaa cgagcaacag tgctatggca agtagtccac tagagagcca	120	
agtcgacaat ctctacaaca ttgtccaagg gggaaagggg ggcgcgcgaa gttgacactgc	180	
agcagaggga aaagatgctg agtttgctg caccctaact ttgcgcactt ggcgaagttg	240	
acttgcagggc gagggtaaaa gatgctatgg ttgggtgcgg accaagttcg ccgtgtgggt	300	
catcattatac gaggtctgtg gtgacgatgg actagttttt agggattttc cggaggtgtc	360	
accacggacc ccccaacttt gcgcacgggg ggtactcaat tttaagtgaa atttaagtaa	420	
aatttactta aaattcacgt ttttgggtgc gcaaagttga ggtggtgact ggtgacacga	480	
aaattttaaa aaagagagat attaaaaaaaaa tatttatatt ttctgtgtca ccgtgtcacc	540	
agtaccacaca gggcgtaatt ttccggaaa ttttcagatt ttccggaaaa attgcatttt	600	
ggggtaataa gtgtccgtca gaattttgcc aaaggactgt cgtatgtcc gagttcccaa	660	
attgagggtt tttggacatc gctctgaaat cgctaacggc gtttcagatt tccgactttt	720	
cgacatattc tgggtatgg atagctgcc aatcggtcag cgtcaatat tccaatattt	780	
cgaaggat atgatatcgc gagatatcat tggatttcat ggggtttgt attagtagcc	840	
gctcatcgtg gaaaaatcggtt gtgaattttat tcaacccgca aatctaatac aagatttgca	900	
tgtatgcagcg actgaccggg gtgagtgttag cagctgttct acggcttgct acgcagacct	960	
atcgtgttag tagttgcac tcttggcgtg aaccggaaga ccggacactcg ctttcgacta	1020	
ttcattccga tgaatatgag attgcaaggg tatcgcttcg tgcgatattt agtgcatc	1080	
agagcacgct acgacttcag tatatcctcg gatacacaga agctcgcaag cattgcatga	1140	
tgcaatc	1147	

<210> 19

<211> 19

<212> DNA

<213> Perkinsus sp.

<220>

<221> misc_feature

<222> (1)..(19)

<223> Generic forward PER1 primer (5'-3') for P. marinus

<400> 19

tagtacccgc tcatcgtgg

19